

### ABSTRACT OF THE DISCLOSURE

A water boiler system for producing steam or hot water includes an apparatus for removing dissolved minerals from the boiler water without the use of water softeners or other chemical treatment agents. An electromagnetic flux producing device first treats water of the boiler system with alternating electromagnetic flux to cause nucleation of dissolved minerals in the bulk boiler water, rather than on boiler surfaces, with nucleated particles then accumulating into particulates which settle by gravity to a low area of the boiler. Water is continuously drained from the low area of the boiler and fed by a pump to a mechanical separator which continuously separates solids from the drain water and continuously passes cleansed water at a high temperature back to the boiler. In the return of the cleansed water to the boiler, it may be directed at high velocity toward the low area of the boiler to stir the boiler water to inhibit compact settling of the precipitated particles and/or to enhance the heat transfer efficiency of the boiler.